

Pre-trials on seed viability at the Julius Kühn-Institut

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Introduction

Common ragweed seeds from various sources were tested for germinability (germination test, Fig. 1) and vitality (TTC-test with different concentrations of TTC-solutions, Fig. 2). The overall germination rates varied between 42 and 76%. Those rates are comparable to French (Fumanal *et al.*, 2007), Austrian (Karrer *et al.* 2011) and American populations (Dickerson 1968).

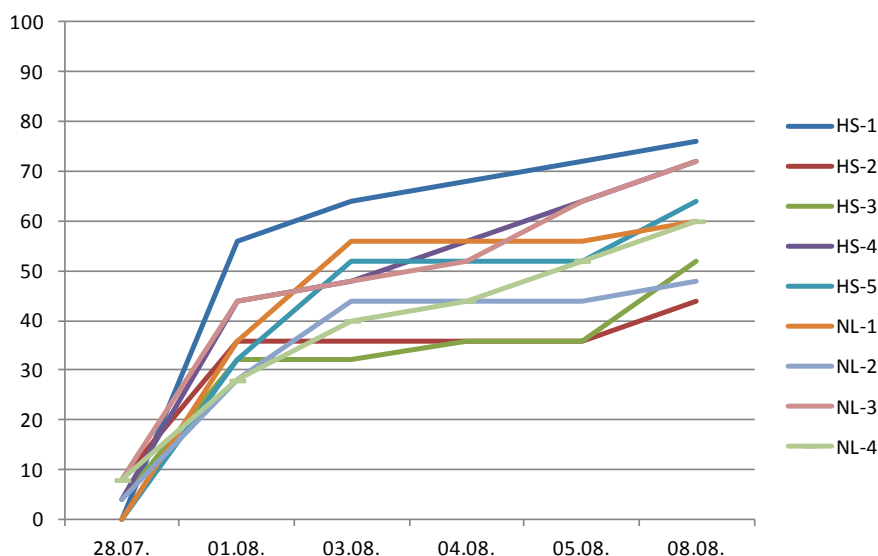


Fig. 1: Germination dynamics of 9 seed samples from two different seeds lots (HS-Herbiseed and NL-Niederlausitz) of common ragweed

0.5% (concentration 1) and 1% (concentration 2) TTC solutions were used for viability tests, incubation time was 6h at 30°C. We used two different seed lots: Herbiseed (HS) seeds were bought from a trading company (Herbiseed) in 2011 and stored in a cool (4°C), dry and dark place until they were taken out for the germination test (ca. after 3 month). Niederlausitz (NL) seeds were collected from a population found in the region Niederlausitz in Germany in 2010. Since then they were stored in an office (app. 20°C) until they were used for the germination test in 2011.

For the results (Fig. 2), we found that 1% solutions showed clearer staining and less partly stained seeds. Most seeds show positive reaction to TTC. Herbiseed samples show more dead and not fully stained seeds than Niederlausitz samples. Seeds boiled for 15 minutes show no staining.

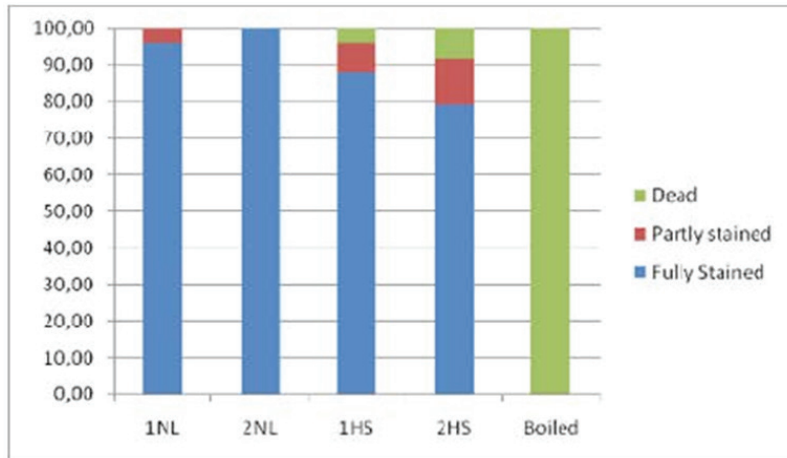


Fig. 2: TTC-staining of Niederlausitz (NL) and Herbiseed (HS) seed lots of common ragweed with two levels of TTC-content of staining solution (i.e., 1: incubated with 0.5% TTC solution; 2 incubated with 1% TTC solution)

References

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